

## **AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions and listings of claims in the application.

### **LISTING OF CLAIMS**

1. (currently amended) A method for reducing a required signal-to-noise ratio in a time division multiple access (TDMA) link of a mobile network, the network including a first node and a second node, the method comprising:

receiving at the first node, in an initial TDMA time slot, an initial TDMA signal burst from the second node, the initial TDMA signal burst comprising a single first preamble;

determining initial link state variables of a link between the first and second nodes by ~~interpreting~~ utilizing a first preamble included in the initial TDMA signal burst, thereby synchronizing the first node to the initial TDMA signal burst;

receiving at the first node, in a subsequent TDMA time slot, a second TDMA signal burst from the second node, the second TDMA signal burst comprising a single second preamble that is shorter than the first preamble of the initial TDMA signal burst in the initial TDMA time slot; and

updating the initial link state variables utilizing ~~[[a]]~~ the second preamble ~~shorter than the first preamble included in a second TDMA signal burst from the second node at the first node.~~

2. (cancelled)

3. (currently amended) The method of Claim 1 wherein determining link state variables comprises utilizing the first preamble to determine at least one of a frequency offset from a nominal frequency, carrier phase, a symbol phase, and a word phase.

4. (currently amended) The method of Claim 1 wherein ~~tracking~~ updating the link state variables comprises:

storing the initial link state variables in a database of the first node.

5. (currently amended) The method of Claim 4 wherein updating the link state variables further comprises:

fetching the stored ~~initial~~ initial link state variables from the database;

utilizing the stored initial link state variables as a starting point for synchronizing to the second preamble; and

~~interpreting~~ adjusting the link state variables to synchronized to the second preamble to update the stored link state variables, thereby synchronizing the first node to the second TDMA signal burst.

6. (currently amended) The method of Claim 5 wherein updating ~~tracking~~ the link state variables further comprises storing the updated link state variables in the database.

7. (currently amended) A system for providing a reduced signal-to-noise ratio requirement in time division multiple access (TDMA) links, within a mobile network, said system comprising:

a first node; and

a second node configured to:

transmit an initial TDMA signal burst to said first node during an initial TDMA time slot, the initial TDMA signal burst comprising a single first preamble; and

transmit a second TDMA signal burst to said first node during a subsequent TDMA time slot, the second TDMA signal burst comprising a single second preamble that is shorter than the first preamble, and wherein said first node configured to:

receive the initial TDMA signal burst;

determine initial link state variables of a link between the first and second nodes by ~~interpreting a~~ utilizing the first preamble included in the initial TDMA signal burst, thereby synchronizing the first node to the initial TDMA signal burst;

receive the second TDMA signal burst; and

update the initial link state variables utilizing ~~[[a]]~~ the second preamble ~~shorter than the first preamble included in a second TDMA signal burst transmitted from said second node to said first node.~~

8. (cancelled)

9. (currently amended) The system of Claim 7 wherein said link state variables comprise at least one of a frequency offset from a nominal frequency, a carrier phase, a symbol phase, and a word phase.

10. (currently amended) The system of Claim 7 wherein to update track said link state variables, said first node is further configured to:

store said initial link state variables in a database of said first node.

11. (currently amended) The system of Claim 10 wherein to update track said link state variables, said first node is further configured to:

retrieve said stored link state variables from said database;

utilize said stored initial link state variables as a starting point for synchronizing to the second preamble; and

~~interpret~~ adjusting the link state variables to synchronizes to said second preamble ~~to update said stored link state variables~~, thereby synchronizing said first node to said second TDMA signal burst.

12. (currently amended) The system of Claim 11 wherein to update track said link state variables, said first node is further configured to store said updated link state variables in said database.

13. (currently amended) A method for reducing a signal-to-noise ratio requirement in a time division multiple access (TDMA) link of a mobile network, the network including a first node and a second node, the method comprising:

receiving at the first node, during an initial TDMA time slot, an initial TDMA signal burst from the second node, the initial TDMA signal burst including a single first preamble;

utilizing the first preamble to determining link state variables;

storing the link state variables in a database of the first node;

receiving at the first node, during a subsequent TDMA time slot, a second TDMA signal burst from the second node, the second TDMA signal burst including a single second preamble that is shorter than the first preamble, the second preamble utilized in combination with the stored link state variable to determine updated link state variables; and

storing the updated link state variables in the database of the first node upon reception of the second TDMA signal burst.

14. (currently amended) The method of Claim 13 wherein utilizing the first preamble to determine link state variables comprises utilizing the first preamble to determine at least one of a frequency offset from a nominal frequency, a carrier phase, a symbol phase, and a word phase.

15. (currently amended) The method of Claim 13 wherein updating the retained link state variables comprises:

retrieving the stored link state variables from the database; **[[and]]**

utilizing the stored link state variables as a starting point for  
synchronization; and

~~interpreting~~ adjusting the link state variables to synchronize to the second  
preamble to update the stored link state variables.

16. (cancelled)